

Remarks

Claims 1–9 and 45–67 are pending in this application. Claims 10–44 have been withdrawn. Claims 2–3 has been amended to make editorial changes. New claims 45–67 have been added to more specifically claim the invention. The new and amended claims are fully supported by the specification. No new matter has been added.

Applicants affirm the election of the invention in group I, claims 1–9.

Section 103 Rejection

Claims 1–6 and 8–9 have been rejected under section 103 as being unpatentable over U.S. patent publication 2003/0152084 (Lee). Claim 7 has been rejected under section 103 as being unpatentable over Lee and further in view of U.S. patent 6,769,033 (Bass).

Reconsideration of the rejection and allowance of the claims are respectfully requested.

The Present Invention. The present invention is a technique of using a digital signal processor (DSP) to manage traffic over a network. A DSP is an integrated circuit specially designed for digital signal processing. Digital signal processing includes processing analog signals such as audio signals and images. DSPs have not been previously been used for network traffic management, especially since DSPs were not designed for networking applications. The present invention provides an effective technique to use a DSP to perform traffic management. The approach is much less expensive and consumes less power than other solutions, such using custom processors or multiple processors.

Lee. Lee discusses a differentiated services device for a network processor. Lee discusses the disadvantages of using off-the-shelf parts, such as RISC processors (which is not a DSP). Instead, as shown in figure 4, Lee advocates using multiple instruction single data (MISD) processors. These are implemented using custom integrated circuits or ASICs. In Lee's design (i.e., figure 4), there at least three separate MISD ICs, each MISD implementing a different function.

Claims 1, 8, and 9 recite “*receiving incoming traffic from the network in a digital signal processing integrated circuit having at least 128K bytes of on-chip memory.*” Nowhere does Lee show or suggest network processing using a DSP. Lee does not describe its MISD processor as being capable of performing DSP functions. And, a MISD cannot be expected to perform DSP

functions since it is a custom IC designed for networking in mind. For Lee, there is no reason to include any DSP functions.

Furthermore, the claims describe performing multiple traffic management functions within the same DSP integrated circuit. Lee also does not show or suggest this feature. Instead, Lee describes separate MISD ICs, which is very different from what is described.

For at least these reasons, claims 1, 8, and 9 are allowable. Dependent claims 2–7 should be allowable for at least similar reasons as claim 1. These dependent claims recite additional limitations which further distinguish the invention over the cited reference.

For example, claim 5 recites “there is *no direct communication path* between the first core and the second core.” Referring to figure 4 of Lee, MISD 220a has a communication path to MISD 220b, and MISD 220b has a communication path to 220c. For at least this additional reason, claim 5 is allowable.

Claim 6 recites “wherein the data generated by the first core is passed to the second core *using a mailbox*.” As shown in figure 4 of Lee, there are communication paths between the MISDs and consequently no need to pass information via a mailbox. For at least this additional reason, claim 6 is allowable.

Claim 7 recites “wherein the first core and second core *are synchronized using an interrupt mechanism with a plurality of timers*.” As shown in figure 4 of Lee, there are communication paths between the MISDs. Therefore, two MISDs can be synchronized by connecting a clock to the MISDs. There is no reason or motivation to synchronize MISDs use an interrupt mechanism. There is no teaching, suggestion, or motivation to combine the references as the examiner suggests. For at least this additional reason, claim 7 is allowable.

New Claims

The new claims more specifically claim the invention. For examples, claims 45–47 and 61–63 recite features of a DSP that are shown or suggested by Lee.

Conclusion

For the above reasons, applicants believe all claims now pending in this application are in condition for allowance. Applicants respectfully requests that a timely Notice of Allowance be issued in this case. If the examiner believes a telephone conference would expedite prosecution of this application, please contact the signee.

Respectfully submitted,

Aka Chan LLP

/Melvin D. Chan/

Melvin D. Chan

Reg. No. 39,626

Aka Chan LLP

900 Lafayette Street, Suite 710

Santa Clara, CA 95050

Tel: (408) 701-0035

Fax: (408) 608-1599

E-mail: mel@akachanlaw.com